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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,547	05/15/2006	Hartmut Wiesenthal	US02 0618 US2	7993

24738 7590 10/02/2008

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
PO BOX 3001
BRIARCLIFF MANOR, NY 10510-8001

EXAMINER	
DUDA, ADAM K	

ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
10/02/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/539,547	WIESENTHAL, HARTMUT	
	Examiner	Art Unit	
	ADAM DUDA	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 11-29* is/are rejected.

7)☒ Claim(s) *10 and 20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 June 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/16/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
(f) BACKGROUND OF THE INVENTION.
    (1) Field of the Invention.
    (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(g) BRIEF SUMMARY OF THE INVENTION.

(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(i) DETAILED DESCRIPTION OF THE INVENTION.
(j) CLAIM OR CLAIMS (commencing on a separate sheet).
(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Content of Specification

(a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.

(b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.

(c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.

(d) The Names Of The Parties To A Joint Research Agreement: See 37 CFR 1.71(g).

(e) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

(f) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:

(1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject

matter of the claimed invention. This item may also be titled "Technical Field."

(2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."

(g) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

(h) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.

(i) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.

(j) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation.

There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).

(k) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).

(l) Sequence Listing, See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 3 and 13 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claims claim dividing the available transmission rate by an overhead factor. This is stated on pages 2, 5, 8 and 10. Figure 4 of the applicant's instant application shows that the maximum encoding rate (Rmax) of the channel is equal to multiplying the available transmission rate with the predetermined overhead factor. Therefore, the figure contradicts the specification and the claims.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 9 and 19 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 9 and 19 state "deleting the I Frames within the selected frames". The claim language is worded as if all the I Frames from within

the selected frames are deleted. If all the I frames from selected frames are deleted then there is no reference frame, the I Frame, from which P frames and B frames are generated.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims **1, 3, 4, 5, 6, and 7** rejected under 35 U.S.C. 103(a) as being unpatentable over **Gosselin (WO 02/37700 A2)** in view of **Winger ("Recent Advances in Video Compression Standards")**.

Gosselin discloses:

Regarding claim 1, a method **(see Gosselin; abstract; "method")** for adaptive encoding of channels **(see Gosselin; abstract; "a method ... for efficiently selecting an optimal channel coding scheme from a plurality of successively higher order channel coding schemes"; title; "Dynamic Wireless Link Adaptation")**, the method comprising: measuring link parameters **(see Gosselin; page 5; "The method comprises, measuring based on signals communicated over the radio link, a data throughput value and determining exclusively from the measured data throughput, an optimal**

channel coding scheme") associated with a communication link **(see Gosselin; page 5; "communicated over the radio link")** between a sender and a receiver **(see Gosselin; page 5; "data throughput" is determined between a sender and a receiver)**; determining an available transmission rate **(see Gosselin; page 5; "measuring based on signals communicated over the radio link, a data throughput value")** of the communication link **(see Gosselin; page 5; "communicated over the radio link")** based on the measured link parameters **(see Gosselin; page 5; "determining exclusively from the measured data throughput, an optimal channel coding scheme")**; calculating a maximum **(see Gosselin; page 5; "maximum throughput value")** encoding rate of the channels **(see Gosselin; page 5; "determining the optimal channel coding scheme")** based on the available transmission rate **(see Gosselin; page 5; "The measured throughput, along with the maximum and minimum throughput are normalized with respect to a data rate for a selected channel coding scheme. The maximum data rate for the selected channel coding scheme is used for the normalization.")**; and if the encoding rate of the channels exceeds the calculated maximum encoding rate **(see Gosselin; page 5; figure 6; stepping from "612" to "614")**, adapting the encoding of the channels **(see Gosselin; page 5; figure 6; step "614" is adapting the encoding rate)** to conform the encoding rate of the channels **(see Gosselin; page 5; figure 6; "step 614" conforms the encoding rate of the channels)** to the calculated maximum encoding rate **(see Gosselin; page 5;**

figure 6; step "614" comprises "Increment CS if change permitted" thus conforming the encoding rate of the channels to the calculated maximum encoding rate).

Regarding claim 4 **(see Gosselin; abstract; "method")**, the method, wherein the step of adapting comprises compressing the channels **(see Gosselin; page 5; "efficiently and dynamically selecting an optimal channel coding scheme from a plurality of channel coding schemes each having a successively higher order coding scheme")** such that the required transmission rate **(see Gosselin; page 5; "determining exclusively from the measured data throughput, an optimal channel coding scheme")** of the compressed channels is less than the calculated maximum encoding rate **(see Gosselin; figure 6; steps "612" -> "616" -> "608" -> "610")**.

Regarding claim 5 **(see Gosselin; abstract; "method")**, the method, wherein the channels comprises data **(see Gosselin; page 5; "measuring based on signals communicated over the radio link, a data throughput value and determining exclusively from the measured data throughput")**, and wherein step of adapting comprises compressing data **(see Gosselin; page 5; "efficiently and dynamically selecting an optimal channel coding scheme from a plurality of channel coding schemes each having a successively higher order coding scheme")** such that an average required transmission rate **(see Gosselin; page 5; "determining exclusively from the measured data throughput, an optimal channel coding scheme")** for the data is less than the

calculated maximum encoding rate **(see Gosselin; figure 6; steps "612" -> "616" -> "608" -> "610")**.

Regarding claim 6, the method **(see Gosselin; abstract; "method")**.

Regarding claim 7, the method **(see Gosselin; abstract; "method")**.

Gosselin does not specifically disclose:

Regarding claim 1, 4 and 5, wherein the channels are digital multimedia information, and the data is the a frame from within a sequence of frames or a sequence of frames.

Regarding claim 3, wherein the step of calculating comprises dividing the available transmission rate by a predetermined overhead factor. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention so that ***calculating a maximum encoding rate of the channels is based on the available transmission rate divided, or multiplied, by a predetermined overhead factor***. Based on the GPRS standard the "overhead factor" for a given interface is calculated by adding the size of the IP packet (Psip) to the sum of the other overheads, and then dividing the total by the size of the IP packet. Therefore, the overhead factor is used as a multiplier to determine the total capacity requirements of a transmission medium. In the instant case the overhead factor (α) is used as a multiplier with the transmission rate (T_x) to determine the maximum encoding rate (R_{max}). Thus, the overhead factor is used as a multiplier to determine the total capacity requirements which is the purpose of the overhead factor and has been well known in the art.

Regarding claim 6, frames within the frame sequence having a lower entropy are compressed at a higher compression ratio than frames having a higher entropy.

Regarding claim 7, wherein the step of compressing comprises deleting higher frequency components within the selected frames.

Winger more specifically discloses:

Regarding claim 1, 4 and 5, wherein the channels are digital multimedia information **(see Winger; page 21 "1.0 Introduction"; "digital video" thus digital multimedia information)**, and the data is a frame **(see Wigner; figure 2; figure 3; "I", "B", and "P" frames)** from within a sequence of frames **(see Wigner; figure 3; "arrangement of Group of Pictures")** or a sequence of frames **(see Winger; figure 3; "Group of Pictures")**.

Regarding claim 6, wherein frames **(see Winger; figure 3; "I", "B", and "P" frames)** within the frame sequence **(see Winger; figure 3; "typical arrangement of a group of pictures")** having a lower entropy **(i.e. lower bit rate)** are compressed at a higher compression ratio than frames having a higher entropy **(i.e. higher bit rate; see Winger; page 22 "2.4 Entropy Coding"; "Entropy coding reduces the average number of bits used to represent the compressed video through the use of means such as variable length codes (VLCs). VLCs are often generated with Huffman codes such that shorter codewords are used to represent more frequently occurring symbols (such**

as small coefficient values)" thus using variable length codes which encodes lower entropy data higher than high entropy data).

Regarding claim 7, wherein the step of compressing comprises deleting higher frequency components within the selected frames **(see Winger; page 22; page 22 "2.3 Quantization"; "The human viewer is more sensitive to reconstruction errors related to low spatial frequencies than those related to high frequencies. Slow linear changes in intensity or colour (low frequency information) are important to the eye. Sharp, high frequency changes can often not be seen and may be discarded." thus deleting higher frequency components within the selected frames)**.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of **Gosselin**, as taught by **Winger**, thereby allowing for higher compression by removing higher frequency and leaving low frequency spatial frequencies which are more important to the human eye **(see Winger; page 22 "2.3 Quantization")**. Therefore, this is the stage where the loss of video detail is traded-off against the compression ratio **(see Winger; page 22 "2.2 Transform")**. Also, allowing for entropy coding which reduces the average number of bits used to represent the compressed video **(see Winger; page 22; "2.4 Entropy coding")**. Entropy coding allows for high compression of low entropy data and low compression of high entropy data **(see Ladino; page 3 of 6; "Entropy Discussed")**.

Gosselin discloses:

Regarding 11, a system **(see Gosselin; figure 2; figure 3; "system"; abstract; "apparatus")** for adaptive encoding of channels **(see Gosselin; abstract; "a method ... for efficiently selecting an optimal channel coding scheme from a plurality of successively higher order channel coding schemes"; title; "Dynamic Wireless Link Adaptation")**, the system comprising: a processor **(see Gosselin; figure 3; "subscriber transceiver station 115")**; and a memory unit **(see Gosselin; figure 3; "subscriber transceiver station 115")** operably coupled to the processor for storing instructions which when executed by the processor cause the processor to operate so as to: measure link parameters **(see Gosselin; page 5; "The method comprises, measuring based on signals communicated over the radio link, a data throughput value and determining exclusively from the measured data throughput, an optimal channel coding scheme")** associated with a communication link **(see Gosselin; page 5; "communicated over the radio link")** between a sender and a receiver **(see Gosselin; page 5; "data throughput" is determined between a sender and a receiver)** determine an available transmission rate **(see Gosselin; page 5; "measuring based on signals communicated over the radio link, a data throughput value")** of the communication link **(see Gosselin; page 5; "communicated over the radio link")** based on the measured link parameters **(see Gosselin; page 5;**

"determining exclusively from the measured data throughput, an optimal channel coding scheme"; calculate a maximum **(see Gosselin; page 5; "maximum throughput value")** encoding rate of the channels **(see Gosselin; page 5; "determining the optimal channel coding scheme")** based on the available transmission rate **(see Gosselin; page 5; "The measured throughput, along with the maximum and minimum throughput are normalized with respect to a data rate for a selected channel coding scheme. The maximum data rate for the selected channel coding scheme is used for the normalization.")**; and if the encoding rate of the channels exceeds the calculated maximum encoding rate **(see Gosselin; page 5; figure 6; stepping from "612" to "614")**, adapt the encoding of the channels **(see Gosselin; page 5; figure 6; step "614" is adapting the encoding rate)** to conform the encoding rate of the channels **(see Gosselin; page 5; figure 6; "step 614" conforms the encoding rate of the channels)** to the calculated maximum encoding rate **(see Gosselin; page 5; figure 6; step "614" comprises "Increment CS if change permitted" thus conforming the encoding rate of the channels to the calculated maximum encoding rate)**.

Regarding claim 14, the system **(see Gosselin; figure 2; figure 3; "system"; abstract; "apparatus")**, wherein adaptation of the encoding of the channels is performed by compressing the channels **(see Gosselin; page 5; "efficiently and dynamically selecting an optimal channel coding scheme from a plurality of channel coding schemes each having a successively**

higher order coding scheme") such that the required transmission rate **(see Gosselin; page 5; "determining exclusively from the measured data throughput, an optimal channel coding scheme")** of the compressed channels is less than the calculated maximum encoding rate **(see Gosselin; figure 6; steps "612" -> "616" -> "608" -> "610")**.

Regarding claim 15, the system **(see Gosselin; figure 2; figure 3; "system"; abstract; "apparatus")**, wherein the channels comprises data **(see Gosselin; page 5; "measuring based on signals communicated over the radio link, a data throughput value and determining exclusively from the measured data throughput")**, and wherein adaptation of the encoding of the channels is performed by compressing data **(see Gosselin; page 5; "efficiently and dynamically selecting an optimal channel coding scheme from a plurality of channel coding schemes each having a successively higher order coding scheme")** such that an average required transmission rate **(see Gosselin; page 5; "determining exclusively from the measured data throughput, an optimal channel coding scheme")** for the data is less than the calculated maximum encoding rate **(see Gosselin; figure 6; steps "612" -> "616" -> "608" -> "610")**.

Regarding claim 16, the system **(see Gosselin; figure 2; figure 3; "system"; abstract; "apparatus").**

Regarding claim 17, the system **(see Gosselin; figure 2; figure 3; "system"; abstract; "apparatus").**

Gosselin does not specifically disclose:

Regarding claim 11, 14 and 15, wherein the channels are digital multimedia information, and the data is the frame from within a sequence of frames or a sequence of frames.

Regarding claim 13, wherein the step of calculating comprises dividing the available transmission rate by a predetermined overhead factor. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention so that ***calculating a maximum encoding rate of the channels is based on the available transmission rate divided, or multiplied, by a predetermined overhead factor***. Based on the GPRS standard the "overhead factor" for a given interface is calculated by adding the size of the IP packet (Psip) to the sum of the other overheads, and then dividing the total by the size of the IP packet. Therefore, the overhead factor is used as a multiplier to determine the total capacity requirements of a transmission medium. In the instant case the overhead factor (α) is used as a multiplier with the transmission rate (T_x) to determine the maximum encoding rate (R_{max}). Thus, the overhead factor is used as a multiplier to determine the total capacity requirements which is the purpose of the overhead factor and has been well known in the art.

Regarding claim 16, wherein frames within the frame sequence having a lower entropy are compressed at a higher compression ratio than frames having a higher entropy.

Regarding claim 17, wherein the compression of the selected frames is performed by deleting higher frequency components within the selected frames.

Winger more specifically discloses:

Regarding claim 11, 14 and 15, wherein the channels are digital multimedia information **(see Winger; page 21 "1.0 Introduction"; "digital video" thus digital multimedia information)**, and the data is a frame **(see Wigner; figure 2; figure 3; "I", "B", and "P" frames)** from within a sequence of frames **(see Wigner; figure 3; "arrangement of Group of Pictures")** or a sequence of frames **(see Winger; figure 3; "Group of Pictures")**.

Regarding claim 16, wherein frames **(see Winger; figure 3; "I", "B", and "P" frames)** within the frame sequence **(see Winger; figure 3; "typical arrangement of a group of pictures")** having a lower entropy **(i.e. lower bit rate)** are compressed at a higher compression ratio than frames having a higher entropy **(i.e. higher bit rate; see Winger; page 22 "2.4 Entropy Coding"; "Entropy coding reduces the average number of bits used to represent the compressed video through the use of means such as variable length codes (VLCs). VLCs are often generated with Huffman codes such that shorter codewords are used to represent more frequently occurring symbols (such as small coefficient values)" thus using variable length codes which encodes lower entropy data higher than high entropy data)**.

Regarding claim 17, wherein the compression of the selected frames is performed by deleting higher frequency components within the selected frames

(see Winger; page 22; page 22 "2.3 Quantization"; "The human viewer is more sensitive to reconstruction errors related to low spatial frequencies than those related to high frequencies. Slow linear changes in intensity or colour (low frequency information) are important to the eye. Sharp, high frequency changes can often not be seen and may be discarded." thus deleting higher frequency components within the selected frames).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of **Gosselin**, as taught by **Winger**, thereby allowing for higher compression by removing higher frequency and leaving low frequency spatial frequencies which are more important to the human eye **(see Winger; page 22 "2.3 Quantization")**. Therefore, this is the stage where the loss of video detail is traded-off against the compression ratio **(see Winger; page 22 "2.2 Transform")**. Also, allowing for entropy coding which reduces the average number of bits used to represent the compressed video **(see Winger; page 22; "2.4 Entropy coding")**. Entropy coding allows for high compression of low entropy data and low compression of high entropy data **(see Ladino; page 3 of 6; "Entropy Discussed")**.

3. Claims 2 and 12 rejected under 35 U.S.C. 103(a) as being unpatentable over **Gosselin (WO 02/37700 A2)** in view of **Winger ("Recent Advances in Video Compression Standards")** and further in view of **Gosselin's "Description of Related Art" (WO 02/37700 A2)**.

Gosselin in view of Winger disclose:

Regarding claim 2, the method **(see Gosselin; abstract; "method")**.

Gosselin in view of Winger do not specifically disclose:

Regarding claim 2, wherein the step of measuring comprises **measuring at least one of** a received signal strength, a bit error rate and a rate of received acknowledgement signals.

Gosselin's "Description of Related Art" more specifically discloses:

Regarding claim 2, wherein the step of measuring comprises **measuring at least one of** a received signal strength **(see Gosselin; pages 3-4 "Description of Related Art"; "With prior art wireless communication systems, several factors are used to estimating a channel to determine an appropriate coding scheme best suited for conditions that exist on a communications channel. To be effective, an indicator must be able to provide some representation of the relationship between the desired signal strength as compared to interference noise and that is, the carrier to interference to noise ratio, C/I." thus a signal strength)**, a bit error rate **(see Gosselin "Description of Related Art"; page 4; "bit error rates (BER) are**

commonly used as an indication of channel conditions") and a rate of received acknowledgement signals.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of **Gosselin in view of Winger**, as taught by **Gosselin's "Description of Related Art"**, thereby providing one of several factors for prior art wireless communication systems that are usable for estimating a channel to determine an appropriate coding scheme best suited for conditions that exist on a communications channel **(see Gosselin's "Description of Related Art"; page 3)**.

Gosselin in view of Winger disclose:

Regarding claim 12, the system **(see Gosselin; figure 2; figure 3; "system"; abstract; "apparatus")**

Gosselin in view of Winger do not specifically disclose:

Regarding claim 12, wherein the measured link parameters comprise **at least one of** a received signal strength, a bit error rate and a rate of received acknowledgement signals.

Gosselin's "Description of Related Art" more specifically discloses:

Regarding claim 12, wherein the measured link parameters comprise **at least one of** a received signal strength **(see Gosselin; pages 3-4 "Description of Related Art"; "With prior art wireless communication systems, several factors are used to estimating a channel to determine an appropriate coding scheme best suited for conditions that exist on a communications channel. To be effective, an indicator must be able to provide some representation of the relationship between the desired signal strength as compared to interference noise and that is, the carrier to interference to noise ratio, C/I." thus a signal strength)**, a bit error rate **(see Gosselin "Description of Related Art"; page 4; "bit error rates (BER) are commonly used as an indication of channel conditions")** and a rate of received acknowledgement signals.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of **Gosselin in view of Winger**, as taught by **Gosselin's "Description of Related Art"**, thereby providing one of several factors for prior art wireless communication systems that are usable for estimating a channel to determine an appropriate coding scheme best suited for conditions that exist on a communications channel **(see Gosselin's "Description of Related Art"; page 3)**.

4. Claims 8 and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over **Gosselin (WO 02/37700 A2)** in view of **Winger ("Recent Advances in Video Compression Standards")**, and further in view of **Lai ("Coding of Image Sequences using Coarse Quantization and Feature Based Hierarchical Block Matching")**.

Gosselin in view of Winger disclose:

Regarding claim 8, the method **(see Gosselin; abstract; "method")**.

Gosselin in view of Winger do not disclose:

Regarding claim 8, wherein the step of compressing comprises mapping values within the selected frames to corresponding values having a coarser quantization.

Lai more specifically discloses:

Regarding claim 8, wherein the step of compressing comprises mapping values within the selected frames to corresponding values having a coarser quantization **(see Lai; title; "Coding of Image Sequences using Coarse Quantization and Feature Based Hierarchical Block Matching"; introduction; "Contour coding methods, or coarse quantization methods, for image coding have been investigated since the early 1960's")**.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of **Gosselin**, as taught by **Lai**, thereby allowing for the

use of one of many different algorithms for compression of images (i.e. frames) and image (i.e. frame) sequences **(see Lai; page 586 "Introduction")**. One of the coding algorithm methods is contour coding methods, or coarse quantization, methods for image coding have been investigated since the early 1960's. The method allows for to encode image sequences at low bit-rate while producing decoded sequences of high quality. Coarse quantization can be used as a means of feature extraction and further the ability to preserve sharp edges in images **(see Lai; page 588 "Conclusions")**.

Gosselin in view of Winger disclose:

Regarding claim 18, the system **(see Gosselin; figure 2; figure 3; "system"; abstract; "apparatus")**.

Gosselin in view of Winger do not disclose:

Regarding claim 18, wherein the compression of the selected frames is performed by mapping values within the selected frames to corresponding values having a coarser quantization.

Lai more specifically discloses:

Regarding claim 18, wherein the compression of the selected frames is performed by mapping values within the selected frames to corresponding values having a coarser quantization **(see Lai; title; "Coding of Image Sequences using Coarse Quantization and Feature Based Hierarchical Block Matching"; introduction; "Contour coding methods, or coarse quantization methods, for image coding have been investigated since the early 1960's")**.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of **Gosselin**, as taught by **Lai**, thereby allowing for the use of one of many different algorithms for compression of images (i.e. frames) and image (i.e. frame) sequences **(see Lai; page 586 "Introduction")**. One of the coding algorithm methods is contour coding methods, or coarse quantization, methods for image coding have been investigated since the early 1960's. The method allows for to encode image sequences at low bit-rate while producing decoded sequences of high

quality. Coarse quantization can be used as a means of feature extraction and further the ability to preserve sharp edges in images **(see Lai; page 588 "Conclusions")**.

5. Claims 9 and 19 rejected under 35 U.S.C. 103(a) as being unpatentable over **Gosselin (WO 02/37700 A2)** in view of **Winger ("Recent Advances in Video Compression Standards")**, and further in view of **Brown ("Packet Level Frame Discard for MPEG-2 Video in an Active Network")**.

Gosselin in view of Winger discloses:

Regarding claim 9, the method **(see Gosselin; abstract; "method")** wherein frames **(see Winger; figure 3; frames)** within the frame sequence **(see Winger; figure 3; sequence of frames)** include I-frames **(see Winger; figure 3; "I")** and B-frames **(see Winger; figure 3; "B")**.

Gosselin in view of Winger do not specifically disclose:

Regarding claim 9, wherein the step of compressing comprises deleting the I-frames within the selected frames.

Brown more specifically discloses:

Regarding claim 9, wherein the step of compressing **(see Brown; page 5; "P-frames hold the middle ground as far as compression. They generally are less than half the size of an I-frame, bus till 3 times the size of a B-frame. B-frames (bi-directionally predictive-coded) reference the previous and following I- and/or P-frame. Bi-directional prediction allows B-frames to attain the highest compression ratio")** comprises deleting the I-frames within the selected frames **(see Brown; page 5; page 6; states that "parts of a new broadcast with a lot of motion, such as highlights from a basketball**

game, can be encoded with a smaller GOP. This provides for more total I-frames and fewer P- and B- frames for less overall compression." Therefore, if more total I-frames and fewer P- and B- frames there are then there is less overall compression which means with fewer total I-frames and more P- and B- frames there is more overall compression.).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of **Gosselin**, as taught by **Brown**, thereby allowing for the improvement of perceived quality of delivered MPEG video by selectively discarding frames during times of congestion. Doing so within the network eliminates the latency of feedback controller server side adaptations. Thus reaction to congestion is nearly instantaneous and restoring after congestion happens just as quickly **(see Brown; page vii; "Abstract")**.

Gosselin in view of Winger discloses:

Regarding claim 19, the system **(see Gosselin; figure 2; figure 3; "system"; abstract; "apparatus")**, wherein frames **(see Winger; figure 3; frames)** within the frame sequence **(see Winger; figure 3; sequence of frames)** include I-frames **(see Winger; figure 3; "I")** and B-frames **(see Winger; figure 3; "B")**.

Gosselin in view of Winger do not specifically disclose:

Regarding claim 19, wherein the compression of the selected frames is performed by deleting the I-frames within the selected frames

Brown more specifically discloses:

Regarding claim 19, wherein the compression **(see Brown; page 5; "P-frames hold the middle ground as far as compression. They generally are less than half the size of an I-frame, bus till 3 times the size of a B-frame. B-frames (bi-directionally predictive-coded) reference the previous and following I- and/or P-frame. Bi-directional prediction allows B-frames to attain the highest compression ratio")** of the selected frames is performed by deleting the I-frames within the selected frames **(see Brown; page 5; page 6; states that "parts of a new broadcast with a lot of motion, such as highlights from a basketball game, can be encoded with a smaller GOP. This provides for more total I-frames and fewer P- and B- frames for less overall compression." Therefore, if more total I-frames and fewer P- and B-frames there are then there is less overall compression which means with**

fewer total I-frames and more P- and B- frames there is more overall compression.).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of **Gosselin**, as taught by **Brown**, thereby allowing for the improvement of perceived quality of delivered MPEG video by selectively discarding frames during times of congestion. Doing so within the network eliminates the latency of feedback controller server side adaptations. Thus reaction to congestion is nearly instantaneous and restoring after congestion happens just as quickly **(see Brown; page vii; "Abstract")**.

Allowable Subject Matter

6. Claims 10 and 20 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ADAM DUDA whose telephone number is (571)270-5136. The examiner can normally be reached on Mon. - Fri. 9:30 a.m. - 7:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang B. Yao can be reached on (571) 272 - 3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/ADAM DUDA/
Examiner, Art Unit 2616

/Kwang B. Yao/
Supervisory Patent Examiner, Art Unit 2616